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ABSTRACT

This publication presents projections of classroom teaching positions in Grades K-12 for regular day public schools in New York State for the years 1989-1994. Two basic assumptions underly the projections: (1) the numbers of teachers in all subject areas in the base year 1988-89 were adequate to meet the educational needs of the public schools of the state; and (2) the number of teachers needed is largely determined by the number of students enrolled. The report is organized into three sections, each consisting of three tables. Tables 1-3 display statistics on the classroom teaching force, actual (1985-90) and projected (1989-94); classroom teacher vacancies, actual and projected; and vacancies to be filled by new teachers, actual and projected, for the total state. The same projections are shown in tables 4-6 for the New York City public schools, and for the state exclusive of New York City in tables 7-9. Two appendixes describe methodology, and a third appendix includes the number of provisional teaching certificates issued in selected years from 1968 to 1988. (LL)

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ED340673

Projections of

PUBLIC SCHOOL CLASSROOM TEACHERS

NEW YORK STATE

1989-90 TO 1993-94

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PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS

NEW YORK STATE

1989-90 TO 1993-94

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Information Center on Education
January 1990

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FOREWORD

This report presents projections of classroom teaching positions in kindergarten through Grade 12 for regular day public schools in New York State. Excluded are positions in prekindergarten, nonpublic schools and Boards of Cooperative Educational Services (BOCES).

There were two basic assumptions underlying the projections of classroom teachers needed for 1989-90 through 1993-94, namely:

1. The numbers of teachers in all subject areas in the base year, 1988-89, were adequate to meet the educational needs of the public schools of the State;

2. The number of teachers needed is largely determined by the number of students enrolled.

No assumptions were made concerning future economic, social or political conditions which might impact on need for teachers. A complete description of the methodology is attached as Appendices A and B.

The report is organized in three sections, each consisting of three tables. Tables 1-3 display projections of (1) the classroom teaching force, (2) classroom teacher vacancies and (3) vacancies to be filled by new teachers through 1993-94 for the total State. The same projections are shown for the New York City public schools in tables 4-6 and the State exclusive of New York City in tables 7-9. Also included are the number of provisional teaching certificates issued in selected years from 1968 to 1988 (Appendix C).

HIGHLIGHTS

- The number of teachers is projected to increase from 169,898 to 179,357 between 1988-89 and 1992-93 (table 1).

- In New York City, the number of teachers is expected to increase by 2,883 over the five year period (table 4) while the remainder of the State shows an anticipated increase of 6,576 (table 7).

- Of the estimated 170,600 teaching positions in the State's public schools in 1989-90, 15,416 will be vacancies needed to be filled (table 2). Cumulative vacancies over the five-year period are estimated to be 85,056. Cumulative vacancies are projected to be 35,307 in New York City and 49,749 outside New York City (tables 5 and 8).

- Of the 85,056 anticipated vacant positions to be filled between 1989-90 and 1992-93, 24,023, or 28 percent of those positions, are expected to be filled by new teachers. The remaining 61,033 vacancies will be filled by experienced teachers not currently employed in the public school sector.

- After declining for a number of years, the number of Provisional Teaching Certificates issued has begun to increase. Nearly 20,000 such certificates were issued in 1988-89 (Appendix C).

TABLE 1
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK STATE
1985-86 TO 1993-94

Subject Area	Number of Teachers (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	6,323	6,329	6,504	6,692	6,819	7,106	7,292	7,612	7,977
Common Branch	43,884	43,976	44,487	44,629	45,286	45,835	46,556	47,253	48,124
Other (a)	6,825	6,824	8,046	8,969	9,095	9,218	9,367	9,518	9,703
Total	57,032	57,129	59,037	60,290	61,200	62,159	63,215	64,383	65,804
Secondary (7-12)									
English	11,912	11,503	11,194	10,809	10,576	10,502	10,561	10,693	10,846
Foreign Languages	4,901	5,147	5,401	5,504	5,612	5,701	5,732	5,806	5,891
Mathematics	11,268	11,227	10,992	10,691	10,464	10,392	10,450	10,580	10,728
Science	9,731	9,711	9,599	9,417	9,212	9,145	9,196	9,313	9,450
Social Studies	9,948	9,850	9,644	9,606	9,614	9,683	9,736	9,860	10,004
Occupational Education	9,171	9,574	9,951	9,375	9,171	9,105	9,155	9,272	9,408
Other (b)	12,962	13,235	12,375	12,458	12,192	12,109	12,176	12,327	12,502
Total	69,893	70,247	69,156	67,860	66,841	66,637	67,006	67,851	68,829
Combined Elementary and Secondary Education (K-12)									
Special Education	21,336	21,561	21,069	21,518	21,868	21,986	22,234	22,568	22,980
Physical Education and Recreation	7,963	8,056	8,031	7,943	8,046	8,089	8,176	8,302	8,453
Library	2,773	2,874	3,040	3,099	3,198	3,216	3,250	3,300	3,360
Reading	5,759	5,766	5,717	5,779	5,836	5,867	5,931	6,022	6,132
Bilingual Education	3,129	3,070	3,276	3,409	3,611	3,629	3,670	3,728	3,799
Total	40,960	41,327	41,133	41,748	42,559	42,787	43,261	43,920	44,724
GRAND TOTAL	167,885	168,703	169,326	169,898	170,600	171,583	173,482	176,154	179,357

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 2

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES

NEW YORK STATE

1985-86 TO 1993-94

Subject Area	Number of Position Vacancies (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	1,078	614	673	712	699	868	790	940	1,015
Common Branch	4,848	3,725	3,838	3,347	4,087	4,038	4,263	4,311	4,567
Other (a)	1,122	682	1,901	1,691	1,013	1,019	1,056	1,073	1,126
Total	7,048	5,021	6,412	5,750	5,799	5,925	6,109	6,324	6,708
Secondary (7-12)									
English	1,015	719	669	550	708	857	997	1,085	1,127
Foreign Languages	829	722	740	637	664	658	609	656	675
Mathematics	774	939	628	491	583	730	870	957	995
Science	1,027	773	643	556	563	689	814	892	933
Social Studies	731	689	545	653	759	846	854	952	1,003
Occupational Education	1,275	1,278	1,341	401	761	886	1,000	1,079	1,115
Other (b)	1,049	1,518	245	1,225	953	1,114	1,265	1,364	1,412
Total	6,700	6,638	4,811	4,513	4,991	5,780	6,409	6,985	7,260
Combined Elementary and Secondary Education (K-12)									
Special Education	3,090	2,629	1,864	2,559	2,548	2,366	2,511	2,632	2,750
Physical Education and Recreation	693	711	500	420	650	607	662	720	767
Library	277	376	420	284	336	258	273	288	301
Reading	460	623	403	492	519	502	541	572	604
Bilingual Education	455	250	429	485	573	411	438	458	479
Total	4,975	4,589	3,616	4,240	4,626	4,144	4,425	4,670	4,901
GRAND TOTAL	18,723	16,248	14,839	14,503	15,416	15,849	16,943	17,979	18,869

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 3

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS

NEW YORK STATE

1985-86 TO 1993-94

Subject Area	Number of Teachers (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	230	206	222	250	239	247	257	271	281
Common Branch	1,238	1,106	1,218	1,319	1,239	1,248	1,293	1,320	1,330
Other (a)	234	221	304	322	317	325	336	337	343
Total	1,702	1,533	1,744	1,891	1,795	1,820	1,886	1,928	1,954
Secondary (7-12)									
English	288	246	244	192	224	216	215	213	221
Foreign Languages	196	218	232	195	225	229	228	226	234
Mathematics	334	255	250	238	254	239	242	245	250
Science	371	308	243	230	275	254	247	253	263
Social Studies	243	230	187	247	218	217	219	229	226
Occupational Education	212	244	236	189	211	210	206	205	213
Other (b)	356	326	316	349	326	318	324	332	333
Total	2,000	1,827	1,708	1,640	1,733	1,683	1,681	1,703	1,740
Combined Elementary and Secondary Education (K-12)									
Special Education	857	725	764	728	786	767	783	790	811
Physical Education and Recreation	141	145	143	128	139	140	140	141	146
Library	37	41	41	59	48	50	51	54	53
Reading	66	63	67	75	68	69	71	73	74
Bilingual Education	144	118	149	176	163	163	171	175	174
Total	1,245	1,092	1,164	1,166	1,204	1,189	1,216	1,233	1,258
GRAND TOTAL	4,947	4,452	4,616	4,697	4,732	4,692	4,783	4,864	4,952

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 4
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK CITY
1985-86 TO 1993-94

Subject Area	Number of Teachers (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	2,510	2,374	2,342	2,374	2,435	2,535	2,626	2,754	2,927
Common Branch	14,105	13,857	13,859	13,868	13,911	13,978	14,167	14,424	14,817
Other (a)	2,272	2,243	2,356	2,594	2,601	2,616	2,654	2,704	2,781
Total	18,887	18,474	18,557	18,836	18,947	19,129	19,447	19,882	20,525
Secondary (7-12)									
English	3,431	3,232	3,048	2,927	2,897	2,894	2,908	2,930	2,941
Foreign Languages	1,430	1,434	1,459	1,437	1,422	1,421	1,427	1,439	1,444
Mathematics	3,414	3,304	3,200	3,104	3,072	3,069	3,083	3,108	3,119
Science	2,588	2,539	2,437	2,360	2,336	2,333	2,344	2,363	2,372
Social Studies	2,803	2,808	2,680	2,501	2,475	2,473	2,484	2,504	2,513
Occupational Education	2,576	2,642	2,578	2,349	2,325	2,322	2,333	2,352	2,361
Other (b)	3,213	3,627	3,600	3,551	3,514	3,511	3,528	3,555	3,569
Total	19,455	19,586	19,002	18,229	18,041	18,023	18,107	18,251	18,319
Combined Elementary and Secondary Education (K-12)									
Special Education	11,212	10,907	10,153	10,155	10,266	10,319	10,436	10,597	10,798
Physical Education and Recreation	1,882	1,928	1,880	1,779	1,777	1,785	1,806	1,834	1,871
Library	619	667	678	718	717	721	729	740	755
Reading	1,821	1,771	1,665	1,711	1,709	1,717	1,737	1,764	1,799
Bilingual Education	2,551	2,517	2,662	2,698	2,794	2,808	2,840	2,885	2,942
Total	18,085	17,790	17,038	17,061	17,263	17,350	17,548	17,820	18,165
GRAND TOTAL	56,427	55,850	54,597	54,126	54,251	54,502	55,102	55,953	57,009

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 5

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES

NEW YORK CITY

1985-86 TO 1993-94

Subject Area	Number of Position Vacancies (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	561	179	235	284	329	376	381	428	488
Common Branch	2,608	1,499	1,567	1,461	1,555	1,598	1,741	1,842	2,019
Other (a)	723	253	406	503	315	324	350	366	401
Total	3,892	1,931	2,208	2,248	2,199	2,298	2,472	2,636	2,908
Secondary (7-12)									
English	529	275	215	263	354	382	403	417	412
Foreign Languages	273	156	184	155	162	176	183	191	185
Mathematics	395	363	256	250	318	347	368	383	374
Science	391	267	197	206	263	282	302	314	309
Social Studies	409	356	212	138	290	320	341	360	358
Occupational Education	398	403	319	113	301	323	339	350	345
Other (b)	525	867	446	405	438	470	497	515	511
Total	2,920	2,687	1,829	1,530	2,126	2,300	2,433	2,530	2,494
Combined Elementary and Secondary Education (K-12)									
Special Education	1,500	1,095	594	1,104	1,255	1,226	1,307	1,375	1,442
Physical Education and Recreation	270	261	150	60	162	177	196	212	229
Library	63	134	101	100	61	61	62	62	68
Reading	203	260	91	239	205	216	231	239	251
Bilingual Education	355	215	327	335	405	337	359	378	395
Total	2,391	1,965	1,263	1,838	2,088	2,017	2,155	2,266	2,385
GRAND TOTAL	9,203	6,583	5,300	5,616	6,413	6,615	7,060	7,432	7,787

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 6

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS
NEW YORK CITY
1985-86 TO 1993-94

	Number of Teachers (Full-time Equivalent)								
	Actual				Projected				
Subject Area	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	115	86	83	90	95	94	98	104	111
Common Branch	767	585	545	642	634	606	618	645	657
Other (a)	101	68	101	138	111	111	120	124	122
Total	983	739	729	870	840	811	836	873	890
Secondary (7-12)									
English	162	101	101	89	103	94	96	96	98
Foreign Languages	74	63	57	47	60	56	55	55	57
Mathematics	164	101	107	119	115	107	111	114	113
Science	130	97	84	87	93	87	87	89	90
Social Studies	152	125	87	85	102	94	91	94	96
Occupational Education	75	82	86	68	71	72	72	71	73
Other (b)	154	99	99	128	122	110	114	120	118
Total	911	668	621	623	666	620	626	639	645
Combined Elementary and Secondary Education (K-12)									
Special Education	454	354	410	354	380	373	387	385	396
Physical Education and Recreation	46	36	38	29	35	34	34	34	36
Library	4	7	9	14	9	10	11	11	11
Reading	30	22	26	36	28	28	30	31	31
Bilingual Education	118	103	127	150	133	135	141	145	144
Total	652	522	610	583	585	580	603	606	618
GRAND TOTAL	2,546	1,929	1,960	2,076	2,091	2,011	2,065	2,118	2,153

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

TABLE 7
TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHERS
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1985-86 TO 1993-94

	Number of Teachers (Full-time Equivalent)								
	Actual				Projected				
Subject Area	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	3,813	3,955	4,162	4,318	4,384	4,571	4,666	4,858	5,050
Common Branch	29,779	30,119	30,628	30,761	31,375	31,857	32,389	32,829	33,307
Other (a)	4,553	4,581	5,690	6,375	6,494	6,602	6,713	6,814	6,922
Total	38,145	38,655	40,480	41,454	42,253	43,030	43,768	44,501	45,279
Secondary (7-12)									
English	8,481	8,271	8,146	7,882	7,679	7,608	7,653	7,763	7,905
Foreign Languages	3,471	3,713	3,942	4,067	4,190	4,280	4,305	4,367	4,447
Mathematics	7,854	7,923	7,792	7,587	7,392	7,323	7,367	7,472	7,609
Science	7,143	7,172	7,162	7,057	6,876	6,812	6,852	6,950	7,078
Social Studies	7,145	7,042	6,964	7,105	7,139	7,210	7,252	7,356	7,491
Occupational Education	6,595	6,932	7,373	7,026	6,846	6,783	6,822	6,920	7,047
Other (b)	9,749	9,608	8,775	8,907	8,678	8,598	8,648	8,772	8,933
Total	50,438	50,661	50,154	49,631	48,800	48,614	48,899	49,600	50,510
Combined Elementary and Secondary Education (K-12)									
Special Education	10,124	10,654	10,916	11,363	11,602	11,667	11,798	11,971	12,182
Physical Education and Recreation	6,081	6,128	6,151	6,164	6,269	6,304	6,370	6,468	6,582
Library	2,154	2,207	2,362	2,381	2,481	2,495	2,521	2,560	2,605
Reading	3,938	3,995	4,052	4,068	4,127	4,150	4,194	4,258	4,333
Bilingual Education	578	553	614	711	817	821	830	843	857
Total	22,875	23,537	24,095	24,687	25,296	25,437	25,713	26,100	26,559
GRAND TOTAL	111,458	112,853	114,729	115,772	116,349	117,081	118,380	120,201	122,348

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

TABLE 8

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITION VACANCIES
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1985-86 TO 1993-94

Subject Area	Number of Position Vacancies (Full-time Equivalent) Actual 1985-86	1986-87	1987-88	1988-89	Projected 1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	517	435	438	428	370	492	409	512	527
Common Branch	2,240	2,226	2,271	1,886	2,532	2,440	2,522	2,469	2,548
Other (a)	399	429	1,495	1,188	698	695	706	707	725
Total	3,156	3,090	4,204	3,502	3,600	3,627	3,637	3,688	3,800
Secondary (7-12)									
English	486	444	454	287	354	475	594	668	715
Foreign Languages	556	566	556	482	502	482	426	465	490
Mathematics	379	576	372	241	265	383	502	574	621
Science	636	506	446	350	300	407	512	578	624
Social Studies	322	333	333	515	469	526	513	592	645
Occupational Education	877	875	1,022	288	460	563	661	729	770
Other (b) (c)	524	651	(201)	820	515	644	768	849	901
Total	3,780	3,951	2,982	2,983	2,865	3,480	3,976	4,455	4,766
Combined Elementary and Secondary Education (K-12)									
Special Education	1,590	1,534	1,270	1,455	1,293	1,140	1,204	1,257	1,308
Physical Education and Recreation	423	450	350	360	488	430	466	508	538
Library	214	242	319	184	275	197	211	226	233
Reading	257	363	312	253	314	286	310	333	353
Bilingual Education	100	35	102	150	168	74	79	80	84
Total	2,584	2,624	2,353	2,402	2,538	2,127	2,270	2,404	2,516
GRAND TOTAL	9,520	9,665	9,539	8,887	9,003	9,234	9,883	10,547	11,082

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

c The negative number for 1987-88, (201), results from teacher mobility between regions and assignments.

NOTE: BOCES teachers are not included.

TABLE 9

TRENDS AND PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER POSITIONS TO BE FILLED BY NEW TEACHERS
NEW YORK STATE EXCLUSIVE OF NEW YORK CITY
1985-86 TO 1993-94

	Number of Teachers (Full-time Equivalent)								
	Actual				Projected				
Subject Area	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Elementary (K-6)									
Kindergarten	115	120	139	160	144	153	159	167	170
Common Branch	471	521	673	677	605	642	675	675	673
Other (a)	133	153	203	184	206	214	216	213	221
Total	719	794	1,015	1,021	955	1,009	1,050	1,055	1,064
Secondary (7-12)									
English	126	145	143	103	121	122	119	117	123
Foreign Languages	122	155	175	148	165	173	173	171	177
Mathematics	170	154	143	119	139	132	131	131	137
Science	241	211	159	143	182	167	160	164	173
Social Studies	91	105	100	162	116	123	128	135	130
Occupational Education	137	162	150	121	140	138	134	134	140
Other (b)	202	227	217	221	204	208	210	212	215
Total	1,089	1,159	1,087	1,017	1,067	1,063	1,055	1,064	1,095
Combined Elementary and Secondary Education (K-12)									
Special Education	403	371	354	374	406	394	396	405	415
Physical Education and Recreation	95	109	105	99	104	106	106	107	110
Library	33	34	32	45	39	40	40	43	42
Reading	36	41	41	39	40	41	41	42	43
Bilingual Education	26	15	22	26	30	28	30	30	30
Total	593	570	554	583	619	609	613	627	640
GRAND TOTAL	2,401	2,523	2,656	2,621	2,641	2,681	2,718	2,746	2,799

a Includes English, foreign languages, mathematics, science, social studies, art, music, industrial arts, health education and home economics.

b Includes art, music, home economics (nonoccupational) and "other" unclassified secondary subjects.

NOTE: BOCES teachers are not included.

APPENDIX A

METHODOLOGY FOR PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER NEEDS FOR MAJOR SUBJECT AREAS AND FOR TEACHER POSITIONS TO BE FILLED

There were two basic assumptions underlying the projections of classroom teachers needed for 1989-90 through 1993-94. They are:

1. The numbers of teachers in all subject areas in the base year, 1988-89, were adequate to meet the educational needs of the public schools of the State.

2. The number of teachers needed is largely determined by the number of students enrolled.

No assumptions were made concerning future economic, social or political conditions which might impact on need for teachers.

The overall projection strategy was to develop independent projections for New York City and for the State exclusive of New York City. The two projections were added to arrive at a total New York State projection. Projections were done for fifteen major subject areas grouped within grade-level ranges: elementary, secondary and elementary/secondary combined.

The first step in the projection process for each of the two geographic sectors was to examine the trends in pupil/teacher ratios for each subject area for 1982-83 through 1988-89. In most cases, pupil/teacher ratios have been decreasing over the last seven years , but appear to be approaching a minimum point. The ratios were projected to remain constant at the 1988-89 value over the five-year projection period for most subject areas. For a few high-growth subjects, the ratios were allowed to decrease slightly for a year, and then held constant.

Following the projection of pupil/teacher ratios, the number of teachers required for each year in each subject area was projected by dividing projected enrollment* for the appropriate grade level by the projected pupil/teacher ratio for a given year. For example, the projected pupil/teacher ratio for secondary English for 1993-94 in New York City was 130.6. Dividing projected enrollment in New York City in grades 7-12 in 1993-94 (384,232) by 130.6 resulted in 2,941 secondary English teachers for 1993-94.

It should be noted that appropriate projected enrollment bases were used to project teachers at four different levels: kindergarten enrollment for kindergarten teachers, Grade 1-6 enrollment for common branch and "other elementary" teachers, grade 7-12 enrollment for secondary subject area teachers and grade K-12 enrollment for combined elementary/secondary subject teachers, except special education. Special education teachers were projected based on the historic ratio of special education teachers to enrollment of ungraded handicapped students. These trends were extrapolated and applied to projected enrollment.

After teachers in each subject area were projected, they were added to the appropriate grade-level subgroups and then to a grand total. Total New York State projections were computed by adding New York City projections to the projections of teachers in the remainder of the state.

Following the projection of teacher need, by subject area, through 1993-94, a projection of current teachers expected to remain in the profession through 1993-94 was done.

The most recent file of classroom teachers was compared with the file for the prior year to determine what proportion of teachers appeared on both files. In other words, it was determined what proportion of teachers remained as teachers in New York State from one year to the next. This proportion, or retention rate, was determined for each major subject area for the following age groups: under 35, 35-39, 40-44, 45-49, 50-54, 55-59, and 60 and over.

The number of teachers in 1987-88 for each subject area was divided into the above age intervals and used as the entering group for a cohort survival projection. By multiplying each subgroup of teachers in 1988-89 by the appropriate retention rate, the number of teachers from the original group expected to remain in 1989-90 was projected for each age group within major subject areas. The same retention rates were then used to project 1990-91 teachers remaining by using the projected 1989-90 figures. In this manner the projection was carried through 1993-94.

Finally, for each school year, the number of classroom teachers expected to remain was subtracted from the projected number of classroom teachers to obtain the number of positions to be filled.

The above procedure was applied to New York City and the State exclusive of New York City as independent sectors. The projection for the total State was accomplished by adding the two sectors.

Detailed reports on trends and projections of classroom teacher age distributions, median age, and retention rates by subject area are available on request.

* From Projections of Public and Nonpublic School Enrollment and High School Graduates to 1998-99, The University of the State of New York, Information Center on Education, November 1989.

APPENDIX B

METHODOLOGY FOR PROJECTIONS OF PUBLIC SCHOOL CLASSROOM TEACHER VACANCIES TO BE FILLED BY NEW (FIRST-YEAR) TEACHERS

Because past experience has shown that only a minor proportion of all teacher vacancies are filled by first-year (or "new") teachers, it became important to estimate the numbers of such persons who will be needed to fill the projected vacant positions.

A thirteen-year trend analysis (1976 to 1988) of teacher vacancies, net position changes and positions filled by new teachers was examined. From 1976 to 1981, the percent of new teachers in filled vacancies remained relatively stable, close to 20 percent. In 1982, this percentage dropped dramatically to a level of around 13 to 16 percent for two years, followed by increases to 21 percent in 1984 and 32 percent by 1988. Because of the instability of this statistic in recent years it has only limited value as a factor in projecting new teachers.

A second approach to projecting new teachers is to relate new teachers to the total number of teachers in the teaching force. Based on this approach, trends and projections of the percent of new teachers in the teaching force for 1985-86 through 1993-94 were developed and examined for New York State, New York City and the State exclusive of New York City. Data for 1985-86 through 1988-89 show relative stability of percentage of new teachers for each of the sectors. This percentage was projected by using a four-year moving average, beginning with an average of 1985-86 through 1988-89 to project 1989-90 and ending with an average of 1989-90 through 1992-93 to project 1993-94. The numbers of new teachers were projected by multiplying the project percentages by projected total teachers.

APPENDIX C

NUMBER OF PROVISIONAL TEACHING CERTIFICATES ISSUED
NEW YORK STATE
1968 TO 1988

Certification Area	Year							
	1968	1970	1974	1976	1980	1984	1986	1988
Elementary	9,414	14,643	16,228	10,901	6,374	6,733	6,656	7,641
English	2,355	3,057	2,792	1,411	774	816	1,059	1,081
Social Studies	3,749	3,218	2,644	1,620	704	723	936	1,179
Mathematics	1,920	1,616	1,487	905	458	700	955	989
Foreign Languages	2,111	1,909	1,598	1,047	494	472	798	917
Sciences	3,571	2,997	2,275	1,557	551	1,050	1,645	1,612
Art	841	1,149	1,442	941	541	474	572	631
Business	491	855	695	439	394	422	384	428
Industrial Arts	327	632	485	364	276	209	203	137
Home Economics	545	569	474	332	187	132	154	126
Music	759	883	905	812	746	736	785	696
Physical Education	1,164	1,518	2,057	1,412	1,051	924	805	754
Health	322	419	590	353	217	198	199	206
Vocational	--	200	259	301	161	193	288	380
Handicapped	562	948	839	1,644	3,420	3,493	3,256	2,944
Total	28,131	34,613	34,770	24,039	16,348	17,275	18,695	19,721

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